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| 10/072,317 | 02/06/2002 | Eyal Aronoff | QSOFT.103A | 9700 |
| 20995 | 7590 | 05/17/2005 | EXAMINER | |
| KNOBBE MARTENS OLSON & BEAR LLP | | | AILES, BENJAMIN A | |
| 2040 MAIN STREET | | | ART UNIT | |
| FOURTEENTH FLOOR | | | PAPER NUMBER | |
| IRVINE, CA 92614 | | | 2142 | |

DATE MAILED: 05/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/072,317

Applicant(s)

ARONOFF ET AL.

Examiner

Benjamin A. Ailes

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 February 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-23 have been examined.
2. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware of in the specification.

Priority

3. The effective filing date for the subject matter defined in the pending claims in this application is 6 February 2001.

Specification

4. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The

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disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

5. The abstract of the disclosure is objected to because the first line of the abstract recites: "Aspects of embodiments of the present disclosure include...". Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-3, 5-7, and 10-11, and 13-22 rejected under 35 U.S.C. 102(b) as being unpatentable by Kolovson (U.S. 5,951,695).

8. Regarding claim 1, Kolovson discloses a database cluster which avoids client failure by connecting to multiple nodes of the cluster, the database cluster comprising:

a first computing system including:

a primary connection manager which forms a client connection with and receives transactions from at least one client (col. 4, lines 39-47), and

a primary database management system (DBMS) which communicates with the primary connection manager to receive the transactions and executes the transactions on data stored in one or more data files; and

a second computing system including (col. 4, lines 48-51):

a secondary connection manager (col. 4, lines 39-47), and

a secondary DBMS which communicates with the secondary connection manager and can access data stored in the one or more data files (col. 4, lines 51-54),

wherein when the second connection manager determines that a predetermined condition is met, the second connection manager receives data from the client connection, replays incomplete portions of open transactions on the data through the secondary DBMS, and begins to receive additional transactions from the at least one client to be executed against the one or more data files (col. 4, lines 54-57).

9. Regarding claim 11, Kolovson discloses primary and at least one secondary connection manager of a database cluster, which manage a connection between at least one client and two or more database management systems (DBMSs), wherein the primary and at least one secondary connection manager can move the connection from the primary connection manager to the at least one secondary connection manager while providing protocols for the connection native to the two or more DBMSs, the primary and secondary connection manager comprising:

a first memory (col. 4, lines 58-64);

a primary connection configured to form a connection with a client and to place statements from transactions from the client into the first memory (col. 4, lines 48-51);

a primary protocol shadow configured to retrieve the statements and forward the statements to a primary DBMS (col. 4, lines 48-51);

a secondary memory (col. 4, lines 58-64);

a secondary connection configured to receive transactions from the connection with the client when one or more predetermined conditions are met and to place new statements from the transactions from the client into the second memory (col. 4, lines 39-47);

at least one process configured to replay any incomplete statements of open transactions (col. 4, lines 54-57); and

a secondary protocol shadow configured to connect to the at least one process until the incomplete statements are forwarded to a secondary DBMS and then to connect to the secondary memory to retrieve the new statements and forward the new statements to the secondary DBMS (col. 4, lines 54-57).

10. Regarding claim 2, in accordance with claim 1, Kolovson discloses the highly available database cluster wherein the predetermined condition comprises a failure of the first computing system (col. 4, lines 54-57).

11. Regarding claim 3, in accordance with claim 1, Kolovson discloses the highly available database cluster wherein the predetermined condition comprises a failure of the primary DBMS (col. 4, lines 54-57).

12. Regarding claims 5 and 15, in accordance with claims 1 and 11, Kolovson discloses the highly available database cluster wherein the primary connection manager

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and the secondary connection manager communicate with one another (col. 4, lines 39-47).

13. Regarding claim 6, in accordance with claim 5, Kolovson discloses the highly available database cluster wherein the primary connection manager transmits copies to the secondary connection manager of data packets which include the transactions and responses or acknowledgements to the transactions (col. 4, lines 51-54).

14. Regarding claims 7 and 16, in accordance with claims 5 and 15, Kolovson discloses the highly available database cluster wherein the primary connection manager and the secondary connection manager exchange statistics in order to monitor the client connection (col. 4, lines 51-54).

15. Regarding claim 10, in accordance with claim 7, Kolovson discloses the highly available database cluster wherein the statistics include whether the secondary connection manager can communicate with the primary connection manager (col. 4, lines 54-57).

16. Regarding claim 13, in accordance with claim 11, Kolovson discloses the primary and at least one secondary connection manager wherein the at least one process further comprises:

an import process configured to retrieve the statements from the primary connection and store those statements associated with open transactions (col. 4, lines 54-57); and

a replay process configured to access the stored statements and to forward the stored statements to the secondary protocol shadow (col. 4, lines 54-57).

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17. Regarding claim 14, in accordance with claim 11, Kolovson discloses the primary and at least one secondary connection manager wherein the secondary protocol shadow is configured to access a log file of the primary DBMS to ensure against replaying of statements of closed transactions (col. 4, lines 58-65).

18. Regarding claim 17, Kolovson discloses a method of providing native protocol access and transparent fail-over to a client connection thereby avoiding a client failure when a primary host fails, the method comprising:

rerouting a client connection between a first host and a client to a second host (col. 4, lines 39-47);

replaying at least one statement from open transactions, wherein the at least one statement includes a statement received but not committed by the first host when the client connection was moved from the first host (col. 4, lines 54-57); and establishing communication between the second host and the client over the client connection (col. 4, lines 39-47).

19. Regarding claim 18, in accordance with claim 17, Kolovson discloses the method further comprising sending keepalive messages to the client in order to keep the client from dropping the client connection (col. 5, lines 31-37).

20. Regarding claim 19, in accordance with claim 17, Kolovson discloses the method wherein the replaying at least one statement further comprising removing leftover statements of closed transactions (col. 4, lines 51-54 and col. 5, lines 19-30).

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21. Regarding claim 20, Kolovson discloses a method of providing transparent fail-over to a client connection thereby avoiding a client failure when a primary database management system DBMS fails, the method comprising:

- monitoring statistics of a client connection between a first DBMS and a client (col. 4, lines 51-54);

- determining from the statistics a need to move the client connection to a second DBMS while keeping the client connection alive from a perspective of the client (col. 4, lines 51-57);

- rerouting the client connection to the second DBMS (col. 4, lines 39-47);

- replaying any statements from open transactions rolled back when the client connection was moved from the first DBMS (col. 4, lines 58-65); and

- establishing communication between the second DBMS and the client over the client connection (col. 4, lines 39-47).

22. Regarding claim 21, Kolovson discloses a data processing system which provides transparent fail-over to a client connection, thereby avoiding a client failure when a primary host fails, the data processing system comprising:

- a first host configured to accept a client connection from a client (col. 4, lines 39-47);

- a connection manager which reroutes the client connection to a second host without recognition by the client (col. 4, lines 39-47); and

- a replay process which forwards to the second host at least one incomplete statement from open transactions when the client connection was moved from

the first host, wherein the connection manager establishes communication between the second host and the client over the client connection (col. 4, lines 48-57).

23. Regarding claim 22, in accordance with claim 21, Kolovson discloses the data processing system wherein the client communication comprises a protocol native to the primary host (col. 4, lines 39-47).

Claim Rejections - 35 USC § 103

24. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

25. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

26. Claims 4, 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kolovson in view of Wolff (U.S. 6,067,545).

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27. Regarding claim 4, Kolovson discloses the method of detecting a predetermined condition in a database system, but is silent on the predetermined condition being an unbalanced workload between a first and a second computing system. However, in art related to the rebalancing of workloads in computer network systems, Wolff discloses the ability to detect when specific nodes' workloads become unbalanced and a method to rebalance resources in the network in order to rectify the problem (see Wolff, col. 5, lines 37-42 and col. 20, lines 37-46). One of ordinary skill in the art at the time of the applicant's invention would have been motivated to utilize the load rebalancing system as disclosed by Wolff in combination with the database cluster system as disclosed by Kolovson in order to provide more efficient, robust communication between a plurality of clients and a plurality of resources via a plurality of nodes.

28. Regarding claims 8 and 9, Kolovson discloses the method of keeping track of statistics, but is silent on keeping track of the number of clients connected to the system. However, in art related to the applicant's invention, Wolff discloses the method of recording statistics and keeping track of the users connected to system (col. 20, lines 42-49). The motivation rationale utilized in claim 4 applies equally as well to claims 8 and 9.

29. Claims 12 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kolovson in view of Bhanot et al. (U.S. 5,796,934), hereinafter referred to as Bhanot.

30. Regarding claims 12 and 23, Kolovson discloses the use of native protocols but is silent on the protocol being SQL*Net. However, in a related fault tolerant system for a

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client server database system, Bhanot discloses the utilization of the SQL*Net protocol when conducting communications between primary and backup servers (colo. 6, oines 6-22). It would have been obvious to one of ordinary skill in the art at the time the application was made to use the SQL*Net protocol in combination with the database cluster system as disclosed by Kolovson. One of ordinary skill in the art would have been motivated to make such a combination because the SQL*Net protocol is well known in database communication and is used in order to conduct quick and easy communications and hide the complexities associated with network operations (see Bhanot, col. 6, lines 16-19),

Conclusion

31. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kasvari et al. (U.S. 5,933,818) disclose an autonomous knowledge discovery system and method.

Hebert (U.S. 6,728,780) discloses high availability networking with warm standby interface failover.

Lu et al. (U.S. 5,948,108) disclose a method and system for providing fault tolerant access between clients and a server.

Ganesh et al. (U.S. 6,691,139) disclose recreation of archices at a disaster recovery site.

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Morris (U.S. 5,634,052) discloses a system for reducing storage requirements and transmission loads in a backup subsystem in client-server environment by transmitting only delta files from client to server.

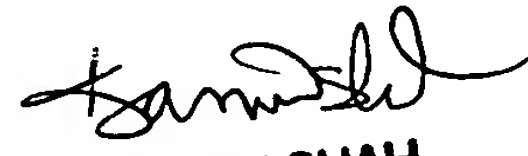
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin A. Ailes, whose telephone number is (571) 272-3899. The examiner can normally be reached on Monday-Friday (7:30-5).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rupal Dharia can be reached at (571) 272-3880. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-3906.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [benjamin.ailes@uspto.gov].

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.


KAMINI SHAH
PRIMARY EXAMINER

Benjamin Ailes
Patent Examiner
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